

GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS

**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 2345**  
**ANSWERED ON 19.12.2025**

**GLOBAL PARTNERSHIPS FOR IMPROVEMENTS IN RAILWAYS**

2345 SMT. SANGEETA YADAV:

Will the Minister of RAILWAYS be pleased to state:

- (a) whether the Ministry has engaged with foreign Governments or industry representatives to explore international partnerships in railway infrastructure, technology and logistics, if so, the details thereof;
- (b) the reforms undertaken to modernise India's railway legislation, services and sectoral governance;
- (c) whether the Ministry has considered technological or operational improvements to strengthen railway activities, if so, the details thereof; and
- (d) the steps taken to strengthen digitalisation, green mobility and innovation across the railway network?

**ANSWER**

MINISTER OF RAILWAYS, INFORMATION & BROADCASTING AND  
ELECTRONICS & INFORMATION TECHNOLOGY

(SHRI ASHWINI VAISHNAW)

(a) to (d) : Ministry of Railways has signed Memorandum of Understanding (MoU) with Switzerland, Germany, Russia, Spain etc. The MoU has been signed for cooperation in the following areas: -

- Freight operations (including automotive transport and logistics, and multimodal logistic hubs/parks)
- Passenger operations (including high-speed) Multimodal transport.
- High-Speed rail development: collaboration in setting specifications, standards, safety standards, safety for planning, design, construction, and operation of high-speed rail corridors.
- Development of a modern, competitive railway organization (including the improvement of organizational structures and railway reformation).

- Best practices for railway maintenance of fixed infrastructure, safety during construction, operational safety, operational planning etc.
- IT solutions for railway operations, marketing and sales, as well as administrative purposes.
- Predictive Maintenance of Assets.

Several reforms have been taken by Indian Railways during last few years to adopt modern technology, improve safety, progress and efficiency of the system. These include following:

- Gati Shakti Directorate/Units: The PM Gati Shakti National Master Plan (NMP) was launched in October 21 to bring a transformative change in the approach towards planning and execution of infrastructural projects pertaining to the transportation sector. Indian Railways has immediately imbibed the principles of Gati Shakti in its project planning process. Drawing upon existing resources, a multi-disciplinary Gati Shakti Directorate has been created in Indian Railways. Similarly Gati Shakti Units have been created in Zonal railways. The Project DPRs are made after consultation with all stakeholders and other infrastructure ministries/departments. This above initiatives have expedited the appraisal/sanction process and execution of Projects.
- Enhanced power of sanction of Projects to GMs and DRMs: The power of sanction for various projects have been enhanced for GMs and DRMs for faster execution of projects.
- Contracts finalisation and management: Full powers have been delegated to General Managers for finalisation of the tenders. Further, Works Contract Management System (IRWCMS) and Contractor's e-MB have been implemented for transparent & quick/fast contract management and contractor's billing.
- Development and implementation of Kavach: To improve safety in train operations, Kavach has been developed as National Automatic Train Protection (ATP) system on Indian Railways. The work of implementation of Kavach has been taken up in mission mode on Indian Railways.
- Elimination of level crossings: To improve safety of train operations and road users, all unmanned level crossings on Broad gauge has been eliminated. Further, it has also been decided to replace all manned level crossings in a phased manner by construction of RoBs/RUBs.
- Adoption of a mechanized system for track laying activities through use of track machines like PQRS, TRT, T-28 etc, and track maintenance using high-output plain

tampers and points & crossing tampers for improved maintainability & reliability of track. Deployment of state-of-the-art modern machines, including Rail Grinding Machines, to further improve asset reliability. Deployment of Integrated Track Monitoring Systems (ITMS) and Oscillation Monitoring System (OMS) for comprehensive health assessment to ascertain optimal maintenance requirements.

- **Station Redevelopment:** The Indian Railway has launched the Amrit Bharat Station scheme aimed at providing world class amenities to passengers and improving efficiency in train operations at Railway stations. So far, 1,337 stations have been taken up for redevelopment in the Amrit Bharat Station Scheme, out of which work on 160 stations have been completed.
- **Introduction of Modern trains:** To enhance passenger experience and provide comfortable journey, State of the Art Vande Bharat trains, Amrit Bharat Trains and Namo Bharat Rapid Rail with modern features have been introduced on Indian Railways. Presently, 164 number Vande Bharat services, 30 number Amrit Bharat services & 4 number Namo Bharat Rapid Rail services are in operation.
- **Bharat Gaurav Trains:** Indian Railways have launched theme based Tourist Circuit trains named as Bharat Gaurav Trains (BGT) with an objective to showcase India's rich cultural heritage and magnificent historical places to the people of India and the world through professionals of the tourism sector and other potential service providers
- **Promoting Digital Transactions at Stations & Trains:** Digital payment facility at various customer interface points such as Ticketing facility, Catering units etc.
- **Freight transportation:** With the view of increasing freight, Indian Railways has carried out major reforms in the form of many liberalized incentives in form of freight rebates, discounts on assured businesses, concessions on short leads, mini rake loadings, goods shed development, General Purpose Wagon Investment Scheme (GPWIS), Business Development Portal etc.
- **Gati Shakti Cargo Terminals:** Gati Shakti Cargo Terminal initiative has been launched to fast track the approvals and ease of establishing Cargo Terminals to increase the freight loading share of IR. So far, 120 GCTs have been commissioned.
- **Railway- India Post Integration to develop "Joint Parcel Product":** As a joint collaborative initiative between two Government Departments to carry out business, complete solution of parcel delivery has been started in which First-mile-last-mile

connectivity by Department of Posts and Intermediate connectivity from station to station has been provided through Railways.

- Coal Chain Coordination Group: Large number of stakeholders involved in coal chain, viz. coal companies, captive and commercial mines, ports, power houses, industries and Indian Railways. To co-ordinate with all the stakeholders it has been planned to setup Coal Chain Coordination Group in Ministry of Railways.
- Annual Recruitment Calendar: Indian Railways has issued an annual calendar for recruitments which will not only reduce the uncertainty and waiting period for candidates but also enables the railways to fill vacancies in a timely manner.
- Railway land policy: To streamline and simplify Railway's land lease policy to enable faster integrated planning and development of infrastructure across the country under the PM Gati Shakti framework, the long-term land leasing policy has been issued.
- Introduction of Rolling blocks: Concept of Rolling Blocks have been introduced on Indian Railways in 2023 by Gazette notification wherein work of integrated/maintenance/repair/replacement of assets is planned upto 52 weeks in advance on rolling basis and executed as per plan by the Divisions.
- The details of the various modernization/upgradation/Safety related works related to better maintenance practices, Technological improvements, better infrastructure and rolling stock etc. undertaken by Railways are tabulated below:-

S.N.	Item	2004-05 to 2013-14	2014-15 to 2024-25	2014-25 Vs. 2004-14
<b>Technological Improvements</b>				
1.	Use of high-quality rails (60 Kg) (Km)	57,450 Km	1.43 Lakh Km	More than 2 times
2.	Longer Rail Panels (260m) (Km)	9,917 Km	77,522 Km	Nearly 8 times
3.	Electronic Interlocking (Stations)	837 Stations	3,691 Stations	More than 4 times
4.	Fog Pass Safety Devices (Nos.)	As on 31.03.14: 90 Nos.	As on 31.03.25: 25,939 Nos.	288 times
5.	Thick Web Switches (Nos.)	Nil	28,301 Nos.	
<b>Better Maintenance Practices</b>				
1.	Primary Rail Renewal (Track Km)	32,260 Km	49,941 Km	1.5 times
2.	USFD (Ultra Sonic Flaw detection) Testing of Welds (Nos.)	79.43 Lakh	2 Crore	More than 2 times

<b>3.</b>	Weld failures (Nos.)	In 2013-14: 3699 Nos.	In 2024-25: 370 Nos.	90 % reduction
<b>4.</b>	Rail fractures (Nos.)	In 2013-14: 2548 Nos.	In 2024-25: 289 Nos.	More than 88% reduction
<b>Better Infrastructure and Rolling Stock</b>				
<b>1.</b>	New Track KM added (Track Km)	14,985 Km	34,428 Km	More than 2 times
<b>2.</b>	Flyovers (RoBs) / Underpasses (RUBs) (Nos.)	4,148 Nos.	13,808 Nos.	More than 3 times
<b>3.</b>	Unmanned Level crossings (Nos.) on BG	As on 31.03.14: 8,948	As on 31.03.24: Nil (All eliminated by 31.01.19)	Removed
<b>4.</b>	Manufacture of LHB Coaches (Nos.)	2,337 Nos.	42,677	More than 18 times

### Green Mobility & Innovations

- Indian Railways has envisioned to become net-zero carbon emitter through off-setting carbon emissions with the usage of power through non-fossil sources, saving in diesel consumption by electrification of railway tracks, consistent efforts directed towards modal shifting of cargo and passenger from road to rail, harnessing hydrogen gas to drive train sets etc.
- Indian Railways has planned to progressively meet its power requirements through renewable sources with combination of solar, wind and other renewable sources based on strategic power procurement planning. By November, 2025 about 898 Mega Watt (MW) of solar plants (both on Rooftops and on land) and about 103 MW of wind power plants have been commissioned. Further, 100 MW RE power under Round the Clock (RE-RTC) mode tied up from Solar Energy Corporation of India (SECI) has also started flowing. In addition to this, 1500 MW capacity of renewable Round The Clock (RE-RTC) has been tied up. This is hybrid solution consisting of solar, wind and storage component.
- Electrification of railway network on Indian Railways has been taken up in mission mode. So far, about 99.2% of Broad Gauge (BG) network has been electrified. The electrification in remaining network has been taken up.
- Head on Generation (HOG) scheme has been implemented in passenger locomotives for feeding electric supply to coaches for train lighting and air conditioning thereby reducing carbon emissions, noise and consumption of diesel.

- Indian Railways has taken up a state-of-the-art project for running of its first hydrogen train, on pilot basis, as per specifications framed by the Research, Design & Standards Organization (RDSO) to demonstrate the use of hydrogen powered train technology in Railways.
- The project establishes the commitment of Indian Railways towards advancements in alternative energy-powered train travel thereby ensuring a cleaner and greener future for the country's transportation sector.

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